

What is claimed is:

1. A method for producing an alcohol comprising
  - (A) culturing a recombinant of a microorganism that does not inherently utilize an alkane, and an alcohol which is generated by oxidation of an alkane, whereby said recombinant has acquired an ability to convert the alkane into the alcohol due to transformation with a DNA encoding a methane oxygenase, and
  - (B) allowing the obtained culture, cells isolated from the culture, or processed product of the said cells to exist with the alkane to produce the alcohol.
2. The method for producing an alcohol according to claim 1, wherein said methane oxygenase is a soluble-type methane oxygenase.
3. The method for producing an alcohol according to claim 2, wherein said methane oxygenase comprises a methane hydroxylase, Component B and a reductase.
4. The method for producing an alcohol according to claim 1, wherein said DNA encoding the methane oxygenase is a soluble-type methane oxygenase gene of *Methylococcus capsulatus*.
5. The method for producing an alcohol according to claim 1, wherein said microorganism is selected from the group consisting of *Escherichia* bacterium, coryneform bacterium, and *Bacillus* bacterium.
6. The method for producing an alcohol according to claim 5, wherein said microorganism is an *Escherichia* bacterium.
7. The method for producing an alcohol according to claim 6, wherein said microorganism is cultured at a temperature of between 20 to 30°C.
8. The method for producing an alcohol according to claim 1, wherein said alkane comprises an alkane having between 1 to 8 carbon atoms, and said alcohol

comprises an alcohol which is generated by oxidation of the alkane.

9. The method for producing an alcohol according to claim 8, wherein said alkane is methane, and said alcohol is methanol.